



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 10, 2011

Joseph E. Pollock  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Indian Point Energy Center  
450 Broadway, GSB  
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 – NRC INTEGRATED  
INSPECTION REPORT 05000247/2011004

Dear Mr. Pollock:

On September 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 2. The enclosed integrated inspection report documents the inspection results, which were discussed on October 24, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

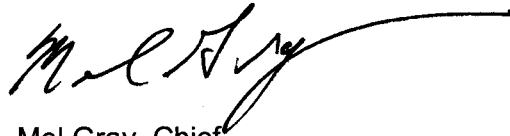
This report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because this finding was entered into your corrective action program (CAP), the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Unit 2. In addition, if you disagree with the cross-cutting aspect assigned to the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Unit 2.

J. Pollock

2

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read "Mel Gray", with a long horizontal flourish extending to the right.

Mel Gray, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket No. 50-247  
License No. DPR-26

Enclosure: Inspection Report 05000247/2011004  
w/Attachment: Supplementary Information

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Sincerely,

/RA/

Mel Gray, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket No. 50-247  
License No. DPR-26

Enclosure: Inspection Report 05000247/2011004  
w/Attachment: Supplementary Information

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**U.S. NUCLEAR REGULATORY COMMISSION****REGION I**

Docket No.: 50-247

License No.: DPR-26

Report No.: 05000247/2011004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 2

Location: 450 Broadway, GSB  
Buchanan, NY 10511-0249

Dates: July 1, 2011 through September 30, 2011

Inspectors: M. Catts, Senior Resident Inspector – Indian Point 2  
O. Ayegbusi, Resident Inspector – Indian Point 2  
S. Barr, Senior Emergency Preparedness Specialist – Region I  
P. Finney, Senior Resident Inspector – Susquehanna  
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S. McCarver, Project Engineer – Region I  
J. Noggle, Senior Health Physicist – Region I  
T. O'Hara, Reactor Inspector – Region I

Approved By: Mel Gray, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

2  
**TABLE OF CONTENTS**

1. REACTOR SAFETY .....	4
1R01 Adverse Weather Protection .....	4
1R04 Equipment Alignment .....	4
1R05 Fire Protection .....	6
1R07 Heat Sink Performance .....	6
1R11 Licensed Operator Requalification Program .....	7
1R12 Maintenance Effectiveness .....	7
1R13 Maintenance Risk Assessments and Emergent Work Control .....	8
1R15 Operability Determinations and Functionality Assessments .....	8
1R19 Post-Maintenance Testing .....	9
1R22 Surveillance Testing .....	10
1EP2 Alert and Notification System (ANS) Evaluation .....	10
1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System .....	11
1EP4 Emergency Action Level (EAL) and Emergency Plan Changes .....	11
1EP5 Correction of Emergency Preparedness Weaknesses .....	12
1EP6 Drill Evaluation .....	12
2. RADIATION SAFETY .....	12
2RS6 Radioactive Gaseous and Liquid Effluent Treatment .....	12
4. OTHER ACTIVITIES .....	16
4OA1 Performance Indicator Verification .....	16
4OA2 Problem Identification and Resolution .....	17
4OA3 Follow-Up of Events and Notices of Enforcement Discretion .....	18
4OA5 Other Activities .....	23
4OA6 Meetings, Including Exit .....	24
ATTACHMENT: SUPPLEMENTARY INFORMATION .....	24
SUPPLEMENTARY INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED .....	A-2
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS .....	A-14

Enclosure

## SUMMARY OF FINDINGS

IR 05000247/2011004; 7/1/2011 – 9/30/2011; Indian Point Nuclear Generating (Indian Point) Unit 2; Follow-Up of Events.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified one finding of very low safety significance (Green), which was an NCV. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect for the finding was determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy personnel did not establish measures to assure that the design basis for sizing of a fuse was adequate and correctly translated into specifications, drawings, procedures, and instructions. Specifically, between November 29, 2005 and September 13, 2010, the fuse for four control room annunciator panels SA-SC was marginally sized which resulted in fatigue-induced fuse failure, associated loss of lighting to the annunciator panels, the loss of the refueling water storage tank (RWST) low low level alarms, and the inoperability of the RWST. Entergy personnel immediately replaced the fuse. This issue was entered into Entergy's CAP as CR-IP2-2010-5713 and CR-IP2-2011-2967.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the loss of the RWST low low level alarms impacts an alert function relied on by operations personnel to swap the suction of the safety injection pumps from the RWST to the containment sump during accident conditions. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green) because the finding was related to a design or qualification deficiency confirmed to result in a loss of operability of the RWST low low level alarms; however, the finding did not represent a loss of safety system function because RWST level indication was available via redundant level instruments on the control room instrument panel that operators also normally rely on and are trained to use. Also the finding did not screen as potentially risk significant due to external initiating events. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program attribute because Entergy personnel did not thoroughly evaluate problems associated with the fuse for control room annunciator panels SA-SC, such that the resolution address causes and extent of conditions, as necessary. This includes properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c) per IMC 0310] (Section 4OA3)

Enclosure

4  
**REPORT DETAILS**

Summary of Plant Status

Indian Point Unit 2 began the inspection period at 100 percent power. The unit remained at or near 100 percent power for the remainder of the inspection period.

**1. REACTOR SAFETY**

**Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

1R01 Adverse Weather Protection (71111.01 – 1 sample)

Impending Adverse Weather

a. Inspection Scope

The inspectors reviewed Entergy staff's overall preparations and protection for Hurricane Irene which was forecast in the vicinity of the facility for August 27-28, 2011. The inspectors walked down systems required for normal operation and shutdown conditions because their safety related functions could be affected, or required, as a result of flooding. The inspectors evaluated the plant staff's preparations in accordance with site procedures to determine if actions were adequate. During the inspection, the inspectors focused on plant specific design features and station procedures used to respond to adverse weather conditions. The inspectors also toured the site to determine whether Entergy staff had identified and secured loose debris that could become projectiles during high wind conditions. The inspectors' evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for the systems selected for inspection, and reviewed whether operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of CAP items to verify whether Entergy personnel identified adverse weather impact issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed for each section of this inspection report (IR) are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 22 containment spray (CS) pump during 21 CS pump test on July 7, 2011

Enclosure

- 24 static inverter after return to service from a swap to the alternate power source on July 28, 2011
- 21 auxiliary boiler feedwater pump (ABFP) during testing of 23 ABFP on September 7, 2011
- 22 residual heat removal (RHR) during testing of the 21 RHR pump on September 19, 2011

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, technical specifications (TSs), work orders (WOs), condition reports (CRs), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

On August 03 – 09, 2011, the inspectors performed a complete system walkdown of accessible portions of the component cooling water (CCW) system to verify the existing equipment lineup was correct. The inspectors reviewed mechanical and electrical equipment lineups, electrical power availability, component lubrication and equipment cooling, hanger and support functionality, operability of support systems, and ensured that ancillary equipment or debris did not interfere with equipment operation. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related CRs and WOs to ensure Entergy staff appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.



1R05 Fire ProtectionResident Inspector Quarterly Walkdowns (71111.05Q – 4 samples)a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy personnel controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan (PFP), and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- PFP 253: Control Room – Control Building
- PFP-254: Battery Room 23 – Superheater Building
- PFP-257: General Area – Turbine Building
- PFP-263: Transformer Yard – Exterior Buildings

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07 – 1 sample)a. Inspection Scope

The inspectors reviewed the 21 emergency diesel generator (EDG) lube oil heat exchanger to determine its readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component and verified Entergy's commitments to NRC Generic Letter 89-13. The inspectors reviewed the results of previous inspections of the 21 EDG lube oil and similar heat exchangers (HXs). The inspectors discussed the results of the most recent inspection with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Entergy personnel initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the HX did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11Q – 1 sample)a. Inspection Scope

The inspectors observed licensed operator simulator training on July 26, 2011, which included a steam generator tube rupture coincident with a loss of offsite power and the failure of select components to automatically start as required. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on the structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance WOs, and maintenance rule (MR) basis documents to ensure that Entergy personnel were identifying and properly evaluating performance problems within the scope of the MR. For each sample selected, the inspectors verified that the SSC was properly scoped into the MR in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Entergy staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across MR system boundaries.

- Control room ceiling water leaks on August 27, 2011
- 21 control room fan failures and maintenance issues on September 1, 2011

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy staff performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the Reactor Safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Entergy staff performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- 24 rectifier out of service (OOS) and nuclear instrumentation system circuits testing on July 6, 2011
- 24 rectifier OOS and over temperature and over power delta-temperature channels 3 and 4 OOS for planned testing on July 12, 2011
- 21 instrument air dryer OOS for planned maintenance, and solar flare activity on August 5, 2011
- 21 instrument air dryer OOS for planned maintenance, Consolidated Edison activities in the switchyard, safety injection logic planned testing and 21 service water (SW) pump planned testing on August 8, 2011
- Transfer switch EDC3 and an alternate safe shutdown breaker (supply for the 21/22 RHR pump or 21 safety injection pump) taken OOS for planned maintenance on August 29, 2011

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- 24 static inverter transfer function failure on July 2, 2011
- Peak containment temperature potentially impacted by calculation error on July 26, 2011
- 22 containment spray pump on August 2, 2011
- 10 CFR Part 21 for the potential failure of the 23 EDG air start motors on August 3, 2011

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to Entergy staff's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy personnel. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Valve PCV 1191 after miller slide valve preventative maintenance on July 15, 2011
- 22 CS pump after maintenance on August 2, 2011
- 22 ABFP after maintenance to the jacking bolts and oil leak repair on August 10, 2011
- 21 EDG after two year planned maintenance on August 16, 2011
- 22 CCW pump after planned maintenance and oil leak repair on August 31, 2011
- Control room ventilation following charcoal replacement on September 19, 2011

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, the UFSAR, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- 2-PT-Q57, NIS comparator, rate, and power mismatch bypass circuits on July 6, 2011
- 2-PT-Q035A, 21 CS pump in-service test on July 7, 2011
- 2-PT-M021A, 21 EDG load test on July 19, 2011
- 2-CY-3610, passive hydrogen recombiner inspection and testing on August 2, 2011
- 2-PT-Q013 CS valves in-service test 866C/866D/869B on August 2, 2011
- 2-PT-Q013-DS149, containment isolation valve PCV-1192 on August 30, 2011

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness (EP)**1EP2 Alert and Notification System (ANS) Evaluation (71114.02 – 1 sample)a. Inspection Scope

The inspectors conducted an onsite review to assess the maintenance and testing of the Indian Point Energy Center (IPEC) Alert and Notification System (ANS). During this inspection, the inspectors interviewed Entergy and contractor staff responsible for implementation of the ANS testing and maintenance, and reviewed CRs pertaining to the ANS for causes, trends, and corrective actions. The inspectors reviewed the ANS procedures and the ANS design report to ensure Entergy was in compliance with design report commitments for system maintenance and testing. The inspection was conducted in accordance with Inspection Procedure (IP) 71114, Attachment 02. Planning Standard, 10 CFR 50.47(b) (5) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System  
(71114.03 – 1 sample)

a. Inspection Scope

The inspectors conducted a review of the IPEC ERO augmentation staffing requirements and the process for notifying and augmenting the ERO. This review was performed to ensure the readiness of key Entergy staff to respond to an emergency event and to ensure Entergy staff's ability to activate their emergency facilities in a timely manner. The inspectors reviewed the station's ERO roster, training records, applicable procedures, drill reports for augmentation, quarterly EP drill reports, and CRs related to the ERO staffing augmentation system. The inspection was conducted in accordance with IP 71114, Attachment 03. Planning Standard, 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 – 1 sample)

a. Inspection Scope

Since the last NRC inspection of this program area, in September 2010, Entergy staff had implemented various revisions of the different sections of the Indian Point Emergency Plan. Entergy staff had determined that, in accordance with 10 CFR 50.54(q), any change made to the Plan, and its lower-tier implementing procedures, had not resulted in any decrease in effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors reviewed EAL changes that had been made since September 2010, and conducted a sampling review of other Emergency Plan changes, including the changes to lower-tier emergency plan implementing procedures and EP-related equipment, to evaluate for any potential decreases in effectiveness of the Emergency Plan. However, this review was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The inspection was conducted in accordance with IP 71114, Attachment 04. The requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05 – 1 sample)

a. Inspection Scope

The inspectors reviewed a sample of self-assessment procedures and reports to assess Entergy staff's ability to evaluate station EP performance and programs. The inspectors reviewed a sample of CRs from October 2010 through August 2011, initiated by Entergy personnel from drills, self assessments, audits, and the November 7, 2010, Unit 2 transformer explosion which had resulted in an Alert declaration. Additionally, the inspectors reviewed quality assurance audits, including 10 CFR 50.54(t) audits, and several self-assessment reports. This inspection was conducted in accordance with IP 71114, Attachment 05. Planning Standard, 10 CFR 50.47(b) (14) and the related requirements of 10 CFR 50 Appendix E were used as reference criteria.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for Unit 2 licensed operators on July 26, 2011, which required emergency plan implementation by an operations crew. Entergy planned for this evolution to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the operations crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Entergy evaluators noted the same issues and entered them into the CAP.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational/Public Radiation Safety**

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 – 1 sample)

a. Inspection Scope

Entergy's program was evaluated against the requirement to provide adequate protection of the public from effluent releases resulting from normal operations of the plant by maintaining the dose to the maximally exposed member of the public as far below the dose limits in 10 CFR Part 20 and 40 CFR Part 190, as is reasonably

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achievable (ALARA). General Design Criterion 60 in 10 CFR 50 Appendix A, requires the control and appropriate mitigation of radioactive materials released as plant effluents. In addition, Paragraph 50.34a (and the associated Appendix I) to 10 CFR Part 50 provide dose based design criteria to ensure the effectiveness of plant effluent processing systems in maintaining effluent releases to the plant environs ALARA.

#### Event Report and Effluent Report Reviews

The inspectors reviewed the IPEC 2009 and 2010 Annual Radiological Effluent Release Reports. Both of these reports included documentation of groundwater effluent releases to the Hudson River and commensurate doses to the maximally exposed member of the public with comparison to regulatory limits. The inspectors reviewed whether the reports were submitted as required by the Off-site Dose Calculation Manual (ODCM)/TSs. The inspectors identified radioactive effluent monitor operability issues reported by Entergy staff as provided in effluent release reports, and determined that the issues were entered into the CAP and adequately resolved.

#### ODCM and UFSAR Reviews

The inspectors reviewed changes to the ODCM made by Entergy staff since the last inspection, against the guidance in NUREG-1301, 1302 and 0133, and Regulatory Guides 1.109, 1.21 and 4.1. The inspectors determined that Entergy staff had not identified any non-radioactive systems that had become contaminated as disclosed either through an event report or are documented in the ODCM since the last inspection.

#### Groundwater Protection Initiative (GPI) Program

The inspectors reviewed the reported groundwater monitoring results, and changes to the station's written program for identifying and controlling contaminated spills/leaks to groundwater.

#### Walkdowns and Observations

The inspectors walked down selected components of the gaseous and liquid discharge systems to verify that equipment configuration and flow paths align with the UFSAR documented descriptions, and reviewed and assessed equipment material conditions. For equipment or areas associated with the systems cited above that were not readily accessible due to radiological conditions, the inspectors reviewed Entergy's material condition surveillance records. The inspectors walked down those filtered ventilation systems whose test results were reviewed during the inspection. The inspectors verified that there were no conditions, such as degraded high efficiency particulate air (HEPA)/charcoal banks, improper alignment, or system installation issues that would impact the performance, or the effluent monitoring capability of the effluent system. The inspectors determined that Entergy staff had not made any significant changes to their effluent release points.

The inspectors observed the routine processing and discharge of effluents (including sample collection and analysis). The inspectors verified that appropriate effluent treatment equipment was being used and that untreated groundwater effluent was designated as an abnormal liquid effluent, and its discharge into the Hudson River was



appropriately calculated and reported in accordance with ODCM specifications, and in accordance with 10 CFR 50, Appendix I regulatory limits.

### Sampling and Analyses

The inspectors selected effluent sampling activities and verified that adequate controls had been implemented to ensure representative samples are obtained (e.g., provisions for sample line flushing, vessel recirculation, composite samplers, etc.). The inspectors reviewed the station's use of compensatory sampling, in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspectors reviewed the results of the inter-laboratory comparison program to verify the quality of the radioactive effluent sample analyses. The inspectors verified that the inter-laboratory comparison program include hard-to-detect radioisotopes as appropriate.

### Instrumentation and Equipment

#### Effluent Flow Measuring Instruments

The inspectors reviewed the methodology that Entergy staff use to determine the effluent stack and vent flow rates. The inspectors verified that the flow rates were consistent with radiological effluents technical specifications (RETS)/ODCM or Final Safety Analysis Report (FSAR) values, and that differences between assumed and actual stack and vent flow rates do not affect the results of the projected public doses.

#### Air Cleaning Systems

The inspectors verified that surveillance test results since the previous inspection for TS required that ventilation effluent discharge systems (HEPA and charcoal filtration) meet TS acceptance criteria.

### Dose Calculations

The inspectors reviewed three radioactive liquid waste discharge permits and three radioactive gaseous waste discharge permits from Unit 2; and five radioactive liquid waste discharge permits and four radioactive gaseous waste discharge permits from Unit 3. The inspectors verified that the projected dose to members of the public were accurate and based on representative samples of the discharge path. The inspectors evaluated the methods used to determine the isotopes in the source term to ensure all applicable radionuclides were included, within detectability standards. The inspectors reviewed the current 10 CFR Part 61 analyses to ensure hard-to-detect radionuclides were included in the source term.

The inspectors reviewed changes in Entergy's offsite dose calculations since the last inspection. The inspectors verified that the changes were consistent with the ODCM and Regulatory Guide 1.109. The inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to ensure appropriate factors were being used for public dose calculations. The inspectors

reviewed the latest Land Use Census and verified that changes have been factored into the dose calculations.

#### GPI Implementation

The inspectors reviewed the identified leakage or spill events, and the IPEC entries recorded in their decommissioning file as required by 10 CFR 50.75 (g). The inspectors verified that the recent soil excavation from the demolished Nuclear Environmental Monitoring Laboratory preliminarily indicated some trace cesium contamination, was being characterized and was documented in the decommissioning file.

The inspectors verified that onsite groundwater sample results and a description of any significant onsite leaks/spills into groundwater for each calendar year were documented in the Annual Radiological Environmental Operating Report for radiological environmental monitoring program or the Annual Radiological Effluent Release Report for the RETS.

#### Problem Identification and Resolution

The inspectors verified that problems associated with the effluent monitoring and control program were being identified by Entergy staff at an appropriate threshold and were properly addressed for resolution in the licensee's CAP.

#### b. Findings and Observations

No findings were identified.

#### Groundwater Contamination

On June 27, 2011 while reviewing the second quarter 2011 groundwater monitoring well sample results, Entergy personnel identified an increase in tritium concentrations in Unit 1 monitoring wells MW-56 and MW-57 (76,000 pCi/L and 20,000 pCi/L, respectively). Subsequently, Entergy personnel conducted an investigation of this unexpected condition. Previously, in 2008, the Unit 1 spent fuel was removed and the Unit 1 spent fuel pools were subsequently drained, which terminated the previously known source of groundwater contamination from the Unit 1 facility. Currently, the source of the contamination has not been identified; however, several possible causes are being evaluated by Entergy staff. This condition has been documented in CR-IP2-2011-3173. The inspectors determined there is no dose impact to the public based on the current scope of this groundwater contamination condition and will continue to follow-up the issue via normal baseline inspection modules.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator (PI) Verification (71151)

##### .1 Mitigating Systems Performance Index (2 samples)

###### a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of July 1, 2010 through June 30, 2011:

- Unit 2 High Pressure Injection System
- Unit 2 Heat Removal System

To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed Entergy's operator narrative logs, CRs, mitigating systems performance index derivation reports, event reports, and NRC integrated IRs to validate the accuracy of the submittals.

###### b. Findings

No findings were identified.

##### .2 Emergency Preparedness (3 samples)

###### a. Inspection Scope

The inspectors reviewed data for the IPEC Emergency Preparedness Performance Indicators (EP PIs), which are: (1) Drill and Exercise Performance (DEP); (2) ERO Drill Participation; and (3) ANS Reliability. The last NRC EP inspection at IPEC was conducted in the third quarter of 2010, so the inspectors reviewed supporting documentation from EP drills, training records, and equipment tests from July 2010 through June 2011, to verify the accuracy of the reported PI data. The review of these PIs was conducted in accordance with IP 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6.

###### b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample).1 Routine Review of Problem Identification and Resolution Activitiesa. Inspection Scope

As required by IP 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended CR review group meetings.

b. Findings

No findings were identified.

.2 Annual Sample: Review of Corrective Actions for Service (SW) Piping Leaks at Indian Point Unit 2 and Unit 3a. Inspection Scope

From August 8 - 12, 2011, the inspectors reviewed several CRs for Indian Point Unit 2 and Unit 3 which documented leaks in the SW system piping of each unit.

The inspectors conducted a detailed review of CR-IP2-2010-06251, written October 12, 2010, which documents an adverse trend in the number of through-wall SW piping leaks which occurred during the third quarter of 2010 at both Indian Point Unit 2 and Unit 3. This CR discusses SW system leaks with six occurring at Unit 2 and five at Unit 3. All 11 leaks had occurred during the third quarter of 2010. The inspectors also conducted a detailed review of the 11 CRs from the reported leaks. The inspectors conducted a walkdown of all accessible areas of the SW systems for Unit 2 and for Unit 3.

The inspectors also conducted a review of Entergy's ACE of the increasing number of leaks reported in CR-IP2-2010-06251. The inspectors reviewed the operating experience contained in CR-IP2-2010-06251. Additionally, the inspectors reviewed the corrective actions implemented in CR-IP2-2010-06251 to address the increased occurrence of SW system piping leaks.

The inspectors also conducted a detailed review of CR-IP2-2010-05414, dated August 31, 2010, which documents the occurrence of pinhole, through-wall, leaks in three EDG SW couplings. Additional EDG SW coupling leaks are described in CR-IP2-2010-05414, CR-IP2-2002-07051, and CR-IP2-2009-05169. The inspectors interviewed system engineers and design engineers responsible for resolving the causes of the leaking couplings.

b. Findings and Observations

No findings were identified.

CR-IP2-2010-06251

Entergy conducted an ACE of the increasing number of leaks reported in CR-IP2-2010-06251 and determined that the direct cause was that "erosion and installation deficiencies have created gaps in the cement lining of SW pipe, leaving bare metal exposed to corrosive river water." The 11 identified leaks have either been evaluated as operable in accordance with American Society of Mechanical Engineers (ASME) Code Case N-513-2 or N-513-3, or the leaks have been repaired. Longer term corrective actions, aimed at correcting the cause of the through-wall leaks, have not been completed but are in the planning stages.

CR-IP2-2010-05414

Because this CR was classified as a Category C, Non-Significant CR, Entergy staff did not conduct a cause determination on these coupling leaks. Rather, Entergy staff made modifications to the design of original couplings following Entergy engineering procedures. The primary design change was the addition of an epoxy coating to new stainless steel coupling bodies to prevent corrosive SW from contacting and degrading the stainless steel.

The inspectors reviewed the Entergy specification for the modified couplings and the Commercial Dedication Evaluation performed to support the coupling changes. The inspectors confirmed that Entergy personnel have replaced the originally affected couplings, including ones which had not leaked.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 4 samples)

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy personnel made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR 50.72 and 50.73. The inspectors reviewed Entergy staff's follow-up actions related to the events to assure that appropriate corrective actions were implemented commensurate with their safety significance.

- A seismic event and tremor were reported at Indian Point at 14:04 on August 23, 2011. Unit 2 operators entered 0-AOP-SEISMIC-1, Seismic Event, and ensured the plant continued to operate safely. Entergy personnel performed a site walkdown including containment and identified no damage or issues as a result of the earthquake. The inspectors performed an independent walkdown of

Enclosure

safety related equipment and buildings and identified no issues. No peak shock annunciators alarmed as a result of the earthquake and there were no EAL entry conditions met.

- Hurricane Irene was reported at Indian Point on August 27–28, 2011. Unit 2 operators entered OAP-008, Severe Weather Preparations, to monitor the changing weather conditions and take additional actions as necessary. Entergy personnel performed a site walkdown of internal and external areas, updated plant risk status with a severe weather risk and verified the capability of safety systems to respond when needed. The inspectors performed an independent walkdown of safety related equipment and reviewed plant procedures to ensure Unit 2 was adequately prepared for the hurricane. The inspectors remained onsite assessing Hurricane Irene's impact on Unit 2; however, the hurricane was significantly downgraded on landing with heavy rains and mild winds. Entergy personnel documented minor issues identified for further follow-up; however no safety related equipment was impacted.

b. Findings

No findings were identified.

Unresolved Item (URI) 05000247/2011-004-01, Water Intrusion in the 480 Volt Room during Hurricane Irene

Introduction: On August 28, 2011, when Hurricane Irene was impacting the area around Indian Point, water intrusion was identified by Entergy staff in the 480 volt room. Water was identified coming in around SW pipes that enter the wall of the 480 volt room from under the transformer yard. As a result, the NRC has opened a URI requiring further information from Entergy regarding the causes of the water intrusion.

Description: During Hurricane Irene's impact at Indian Point on August 28, 2011, operations personnel identified water intrusion in the 480 volt room. Water was entering the room through the seals around SW piping that penetrated the wall between the transformer yard and the 480 volt room. Operations personnel identified that the drain nearest to the water intrusion was plugged, and used a catch basin to direct the water to another drain. Operations personnel also placed sandbags around the 480 volt switchgear.

The inspectors walked down the area during the hurricane and determined no water impacted the operation of the 480 volt switchgear. The inspectors are opening an URI to review the licensee's evaluation of the causes of the water intrusion into the 480 volt room and determine if there is a performance deficiency. Entergy personnel wrote CR-IP2-2011-4324 to address this issue. **URI 05000247/2011004-01, Water Intrusion in the 480 Volt Room during Hurricane Irene.**

.2 (Closed) Licensee Event Report (LER) 05000247/2010-008-00 and LER 05000247/2010-008-01, Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Low-Low Level Alarms

a. Inspection Scope

On September 13, 2010, during performance of alarm checks, Panels SA-SC did not illuminate. The RWST low low level alarms, required by TS 3.5.4, "Refueling Water Storage Tank," were rendered inoperable as a result of the loss of power. Operations personnel entered procedure AOP-ANNUN-1 for failure of flight or supervisory panel annunciators and replaced a fuse found to be blown. Because the RWST low low level alarms are required by TS, Entergy operators declared this a safety system functional failure. Entergy staff determined the direct cause to be the fuse blowing, and the apparent cause to be intermittent grounds in combination with alarm testing resulted in an over current condition. Entergy staff's corrective actions involved determining the source of the intermittent grounds. Entergy staff submitted LER 2010-008-01 for a revised apparent cause that determined the fuse failed from fuse fatigue, and that the contributing cause was that the 10 amp fuse for the annunciator circuit was marginally sized for its design load.

Entergy's corrective actions included replacing the 10 amp fuse with a 15 amp fuse. The inspectors reviewed the LER, CRs, ACE, completed WOs, corrective actions and interviewed Entergy staff to determine whether the station adequately evaluated the condition. These LERs are closed. Specific documents reviewed during this inspection are listed in the attachment.

b. Findings

Marginally Designed Fuse Results in Fuse Failure and Inoperability of the Refueling Water Storage Tank

Introduction: The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy personnel did not establish measures to assure that applicable regulatory requirements and the design basis for a fuse for control room annunciator panels SA-SC was correctly translated into specifications, drawings, procedures, and instructions. Specifically, between November 29, 2005 and September 13, 2010, the fuse for four control room annunciator panels SA-SC was marginally sized which resulted in fuse failure from fuse fatigue, the loss of lighting to these annunciator panels, the loss of the RWST low low level alarms, and the inoperability of the RWST.

Description: On September 13, 2010, operations personnel were testing the control room annunciator panels when a fuse blew, causing loss of lighting to panels SA-SC. These panels include both RWST low low level alarms, which direct operations personnel to manually swap the suction of the safety injection pumps from the RWST to the containment sump during an accident in accordance with TS 3.5.4, operators declared the RWST inoperable and entered the applicable TS action statement which required initiation of a plant shutdown within one hour. Operations personnel replaced the fuse within 13 minutes and exited the applicable action statement.

Entergy staff performed an ACE, and submitted LER 2010-008-00 for the safety system functional failure of the RWST. The ACE and LER attributed the blown fuse to

Enclosure

intermittent grounds on the 24 battery charger in conjunction with control room annunciator panel alarm testing. The corrective actions included immediately replacing the blown fuse, issuing a WO to check for grounds on the 24 battery charger, and initiating an engineering change request to evaluate replacing the fast acting 10 amp fuse with a time delay fuse.

In conducting follow up inspection of this event the inspectors determined that Entergy engineering personnel issued long term corrective actions and were waiting on the 24 battery charger grounds to alarm so Instrumentation and Controls (I&C) personnel could troubleshoot this issue. Operations personnel created a standing order to not test the alarm panels until the grounds were identified. However, the inspectors determined that I&C had already discovered and fixed the source of the grounds and was unaware that operations and engineering personnel were waiting on them to troubleshoot these grounds.

The inspectors further questioned the licensee's basis for concluding the 24 battery charger grounds were the cause of the fuse failure because no 24 battery charger ground alarm had come in when the SA-SC panels went dark. The inspectors questioned if the fuse was sized correctly for the application. In response to these questions Entergy staff determined that when the control room annunciator panels were tested, a non-continuous load of 8.9 amps was drawn on the 10 amp fuse in addition to any continuous current from locked in alarms. Since the 24 battery charger ground did not alarm, Entergy personnel determined there was not a sufficient technical basis for concluding the 24 battery charger grounds was the cause for the fuse failure, and wrote CR-IP2-2011-4517.

After the inspectors' questions, Entergy personnel wrote Engineering Change Request 11042 to address the fuse size. Engineering personnel concluded that the fuse was marginally designed for the annunciator circuit, that the fuse should be designed to the 125% fuse sizing rule which includes continuous and non-continuous loads, and that the fuse should be replaced with a 15 amp fuse. Entergy Engineering Standard, ENN-EE-S-003-IP, Sizing of Fuses, Attachment 7.7, delineates that fuses should be sized for 125% of continuous load + 100% of non-continuous load. The non-continuous load on the circuit when the alarm panels are being tested was 8.9 amps; however, the fuse was sized for only the 100% non-continuous load, so a 10 amp fuse was used. This marginal design did not account for continuous loads on the panels, such as lights locked in or after an outage where numerous lights are locked in. Entergy staff revised the ACE and submitted a revision to the LER indicating that the fuse blew from fuse fatigue, and that the fuse was marginally sized for the application, such that after several years of actuation and approaching the instantaneous loads, the fuse failed. The inspectors noted a similar event occurred in November 2005 when a fuse blew and caused loss of lighting to the SA-SC panels; however, no cause evaluation was performed.

Analysis: The performance deficiency associated with this finding was that Entergy personnel did not establish measures to assure that applicable regulatory requirements and the design basis for the fuse for control room annunciator panels SA-SC was correctly translated into specifications, drawings, procedures, and instructions. This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affects the objective to ensure the

Enclosure



reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the loss of the RWST low low level alarms impacts an alert function relied on by operations personnel to swap the suction of the safety injection pumps from the RWST to the containment sump during accident conditions. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green) because the finding was related to a design or qualification deficiency confirmed to result in a loss of operability of the RWST low low level alarms; however, the finding did not represent a loss of safety system function because RWST level indication was available via redundant level instruments on the control room instrument panel that operators normally rely and train on for level indication. Specifically, the inspectors determined that procedure 2-E-1, Loss of Reactor or Secondary Coolant provides operators direction to transfer from the RWST to cold leg recirculation at a specified level. The inspectors further determined the procedure allows and the operators train to use either the RWST low low level alarms or the RWST level indicators so that the manual swap for cold leg recirculation could have been performed. The finding also did not screen as potentially risk significant due to external initiating events.

The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the CAP attribute because Entergy personnel did not thoroughly evaluate problems associated with the fuse for control room annunciator panels SA-SC, such that the resolution address causes and extent of conditions, as necessary. This includes properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c) per IMC 0310]

**Enforcement:** 10 CFR 50, Appendix B, Criterion III, "Design Control," states, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those SSCs to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Entergy Engineering Standard, ENN-EE-S-003-IP, Sizing of Fuses, Attachment 7.7, indicates that fuses should be sized for 125% of continuous load + 100% of non-continuous load. Contrary to the above, between November 29, 2005 and September 13, 2010, Entergy personnel did not establish measures to assure that applicable regulatory requirements and the design basis for the fuse for control room annunciator panels SA-SC was correctly translated into specifications, drawings, procedures, and instructions. The fuse for four control room annunciator panels SA-SC was marginally sized which resulted in fuse failure from fuse fatigue and impacted the operability of the RWST. Entergy personnel immediately replaced the fuse, and later replaced the fuse with a 15 amp fuse. Because this finding is of very low safety significance and was entered into Entergy's CAP as CR-IP2-2010-5713 and CR-IP2-2011-2967, consistent with Section 2.3.2 of the NRC Enforcement Policy, this violation is being treated as a NCV. **NCV 05000247/2011004-02, Marginally Designed Fuse Results in Fuse Failure and Inoperability of the Refueling Water Storage Tank.**

4OA5 Other Activities.1 (Closed) Unresolved Item 05000247/2011-009-01, Testing of Hydrogen Recombinersa. Inspection Scope

The inspectors completed an evaluation of URI 05000247/2011-009-01 regarding an issue for Entergy personnel not ensuring the operability of the containment hydrogen recombiners as required in Technical Requirements Manual Section 3.7.F, "Post-Accident Containment Venting System." Specifically, Entergy personnel had not performed testing as described in UFSAR Section 6.8.5, "Post-Accident Hydrogen Control Systems – Inspections and Tests," each refueling outage. The test was last performed in accordance with Procedure 2-CY-3610, "Passive Hydrogen Recombiner Inspection and Testing," in April 2006. Entergy personnel entered this issue into their CAP as CR-IP2-2011-2017.

b. Findings

No findings were identified. Entergy personnel tested the 22 passive hydrogen recombiner on May 10, 2011, and 21 passive hydrogen recombiner on August 2, 2011. The inspectors' noted both hydrogen recombiners passed the surveillances tests satisfactorily. The inspectors' review determined that hydrogen recombiners were able to perform their function to reduce hydrogen in containment and no appreciable reduction in safety margin occurred. Therefore, the inspectors determined that the issue was of minor significance and not subject to enforcement action in accordance with the NRCs Enforcement Policy. This URI is closed.

.2 Independent Spent Fuel Storage Installation (IP 60855.1 - 1 sample)a. Inspection Scope

The inspectors observed activities associated with the loading of a dry cask canister to ensure that TSs were met, equipment operated properly, and personnel were properly trained. The inspectors reviewed documents and records associated with the operation of the independent spent fuel storage installation (ISFSI). The inspectors met with reactor engineering personnel and reviewed the fuel selection process, location of fuel assemblies in the canister, inventory, fuel sipping, and associated documentation. The video recording of the fuel assemblies placed into the canister was reviewed to ensure that each fuel assembly was placed into the proper location. The inspectors observed work activities on the refuel floor associated with the fuel selection and loading of fuel assemblies into the cask. The inspectors also observed the movement of the HI-STORM from the ISFSI pad to the truck bay and placement of the HI-STORM onto the low-profile-transporter (LPT), and movement of the LPT with HI-STORM into the Unit 2 fuel storage building. In addition, the inspectors observed a portion of the HI-TRAC/HI-STORM stack-up evolution and transfer of the multi-purpose canister from the HI-TRAC into the HI-STORM. The inspectors observed members of the radiation protection group providing job coverage for the dry cask loading campaign. The inspectors went to the ISFSI pad to inspect the previously loaded HI-STORMs located on the pad. The inspectors reviewed dry cask loading records, dry cask loading procedures and documentation related to the ISFSI site boundary dose criteria specified in 10 CFR 72.104.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On October 24, 2011, the inspectors presented the inspection results to Mr. Joseph Pollock, Site Vice President, and other members of the Entergy staff. The licensee acknowledged the conclusions and observations presented. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

**ATTACHMENT: SUPPLEMENTARY INFORMATION**

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

J. Pollock, Site Vice President  
N. Azevedo, Manager, Engineering  
J. Baker, Shift Manager  
T. Beasely, Engineering  
K. Brooks, Shift Manager  
M. Burney, Nuclear Safety/License IV Specialist  
R. Burroni, Manager, System Engineering  
L. Coyle, General Manager, Plant Operations  
G. Dahl, Nuclear Safety/License IV Specialist  
R. Daley, Engineer III, Nuclear  
M. Dechristopher, Engineering  
G. Dean, Shift Manager  
J. DeFrancesco, Project Manager  
D. Dewey, Shift Manager  
J. Dinelli, Manager, Operations  
R. Dolanksy, Manager, ISI Program  
R. Drake, Engineering  
E. Goethicus, Operations Instructor  
D. Gagnon, Manager, Security  
F. Gumble, Supervisor, Engineering  
F. Inzirillo, Manager, IPEC Quality Assurance  
J. Kirkpatrick, Manager, Maintenance  
J. Lijoi, Superintendent, I&C  
L. Lubrano, Senior Lead Engineer  
D. Mayer, Director, Unit 1  
T. McCaffrey, Manager, Design Engineering  
B. McCarthy, Manager, Assistant Operations  
T. Orlando, Director, Engineering  
W. Osmin, Senior Lead Engineer  
E. Primrose, Shift Manager  
S. Prussman, Nuclear Safety/License IV Specialist  
J. Reynolds, Corrective Action Specialist  
T. Salentino, Superintendent, Dry Fuel Storage  
S. Stevens, Supervisor, Radiation Protection  
A. Stewart, Nuclear Safety/License IV Specialist  
B. Sullivan, Manager, Emergency Preparedness  
M. Tesoriero, Manager, Programs and Components  
J. Thaliath, Engineer II, Nuclear  
M. Troy, Manager, Engineering  
J. Ventosa, VP Operations Support  
R. Walpole, Manager, Licensing  
A. Williams, Assistant General Manager, Plant Operations  
D. Wilson, Manager, Chemistry

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED**Opened

05000247/2011004-01	URI	Water Intrusion in the 480 Volt Room During Hurricane Irene (Section 4OA3)
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Opened/Closed

05000247/2011004-02	NCV	Marginally Designed Fuse Results in Fuse Failure and Inoperability of the Refueling Water Storage Tank (Section 4OA3)
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Closed

05000247/2010008-00	LER	Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Low-Low Level Alarms (Section 4OA3)
05000247/2010008-01	LER	Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Low-Low Level Alarms (Section 4OA3)
05000247/2011009-01	URI	Testing of Hydrogen Recombiners (Section 4OA5)

**LIST OF DOCUMENTS REVIEWED****Common Documents Used**

Indian Point Unit 2, Updated Final Safety Analysis Report  
 Indian Point Unit 2, Individual Plant Examination  
 Indian Point Unit 2, Individual Plant Examination of External Events  
 Indian Point Unit 2, Technical Specifications and Bases  
 Indian Point Unit 2, Technical Requirements Manual  
 Indian Point Unit 2, Control Room Narrative Logs  
 Indian Point Unit 2, Plan of the Day

**Section 1R01: Adverse Weather Protection**Procedures

OAP-008, Severe Weather Preparations, Revision 9

Condition Reports (CR-IP2-)

2011-4304	2011-4311	2011-4318	2011-4320	2011-4322	2011-4324
2011-4326	2011-4331	2011-4332			

**Section 1R04: Equipment Alignment****Procedures**

2-COL-4.1.1, Component Cooling Water System, Revision 24  
 2-COL-10.2.1, Containment Spray System, Revision 19  
 2-COL-21.3, Steam Generator Water Level and Auxiliary Boiler Feedwater, Revision 30  
 2-COL-27.1.6, Instrument Buses, DC Distribution and PA Inverter, Revision 25  
 2-PT-M102, Containment Spray System Monthly Alignment Verification, Revision 0  
 2-PT-Q30C, 23 CCW Pump Testing, Revision 21  
 2-PT-Q017C, Alternate Safe Shutdown Supply Verification to 23 CCP, Revision 12  
 2-SOP-4.1.2, Component Cooling System Operation, Revision 35  
 2-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4, completed  
 July 16, 2011, Revision 2

**Condition Reports (CR-IP2-)**

2009-04429   2009-03666   2010-03509   2011-02327   2011-03281   2011-03685  
 2011-3744

**Maintenance Orders/Work Orders**

WO 130508   WO 237905   WO 249679

**Drawings**

A227781, Auxiliary Coolant System, Sheet 1, Revision 82  
 9321-F-2720, Auxiliary Coolant System, Sheet 2, Revision 89  
 9321-F-2735, Safety Injection System, Revision 140

**Miscellaneous**

IP2-CCWS-DBD, Design Basis Document for Component Cooling Water, Revision 1  
 LER #2010-006-00, Safety System Functional Failure Due to Inoperable Reactor Coolant Loop  
 21 and 22 Hot Leg Wide Range Temperature Indicators Credited for Remote Shutdown  
 per Technical Specification 3.3.4, Dated October 27, 2010  
 System Health Report, Component Cooling Water

**Section 1R05: Fire Protection****Procedures**

EN-DC-161, Control of Combustibles, Revision 5  
 IP2-RPT-03-00015, IP2 Fire Hazards Analysis, Revision 3  
 PFP-253, Control Room – Control Building, Revision 0  
 PFP-254, Battery Room 23 – Superheater Building, Revision 0  
 PFP-257, General Area – Turbine Building, Revision 10  
 PFP-263, Transformer Yard – Exterior Buildings, Revision 3

**Condition Reports (CR-IP2-)**

2009-3880   2010-4481   2011-3677   2011-3727   2011-3730   2011-3739

**Maintenance Orders/Work Orders**

WO 244005

Miscellaneous

Elk Hart Brass Handline Nozzles Vendor Manual, Fog Nozzle Configurations

**Section 1R07: Heat Sink Performance**

Completed Procedures

SEP-SW-001, IPEC NRC G.L. 89-13 Service Water Program, August 15, 2011

Procedures

SEP-SW-001, IPEC NRC G.L. 89-13 Service Water Program, Revision 4

Miscellaneous

GL 89-13, Service Water System Problems Affecting Safety-related Equipment

**Section 1R11: Licensed Operator Regualification Program**

Procedures

2-E-0, Reactor Trip or Safety Injection, Revision 4

2-E-3, Steam Generator Tube Rupture, Revision 1

2-AOP-SG-1, Steam Generator Tube Leak, Revision 12

2-AOP-INST-1, Instrument/Controller Failures, Revision 6

2-AOP-FW-1, Loss of Main Feedwater, Revision 13

Miscellaneous

Form EP-4, Central Control Room Initial Notification Checklist, July 26, 2011, Revision 15

Form EP-5, Upgrade/Update Notification – Alert/SAE/GE Checklist, July 26, 2011, Revision 13

IPEC Simulator Evaluated Scenario LRQ-SES-058, July 26, 2011, Revision 1

Radiological Emergency Data Form, Part 1, July 26, 2011

**Section 1R12: Maintenance Effectiveness**

Completed Procedures

0-FAN-401-HVA, Inspection and Repair of HVAC/Plant Ventilation Fans, October 31, 2008

Procedures

0-FAN-401-HVA, Inspection and Repair of HVAC/Plant Ventilation Fans, Revision 3

2-PT-EM013, CCR Filtration, Revision 13

EN-LI-102, Corrective Action Process, Revision 16

EN-LI-119, Apparent Cause Evaluation (ACE) Process, Revision 11

EN-LI-119-01, Equipment Failure Evaluation, Revision 0

IP-SMM-DC-177, IPEC Unit 2 and 3 Control Room Envelope Integrity Program, Revision 0

Condition Reports (CR-IP2-)

2010-04007	2010-04038	2010-04290	2010-05118	2010-05162	2010-05458
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2011-01102	2011-01104	2011-02873	2011-04320	2011-04324	2011-04397
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Maintenance Orders/Work Orders

152760	247206
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Miscellaneous

Control Room Envelope Inleakage Testing at Indian Point 2 Nuclear Station, May 30, 2010  
Control Room Ventilation System Health Report, 2Q2010

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

EN-WM-104, On Line Risk Assessment, Revision 4  
IP-SMM-WM-101, Online Risk Assessment, Revision 3

Miscellaneous

Operator Narrative Logs, July 6, 2011  
Operator Narrative Logs, July 12, 2011  
Operator Narrative Logs, August 5, 2011  
Operator Narrative Logs, August 8, 2011  
Operator Narrative Logs, August 29, 2011  
Operator's Risk Report, July 6, 2011  
Operator's Risk Report, July 12, 2011  
Operator's Risk Report, August 5, 2011  
Operator's Risk Report, August 8, 2011  
Operator's Risk Report, August 29, 2011

**Section 1R15: Operability Determinations and Functionality Assessments**

Procedures

2-PT-M021C, Emergency Diesel Generator 23 Load Test, Revision 17  
EN-OP-104, Operability Evaluation Form, Attachment 9.5, Revision 5

Completed Procedures

2-PT-M021C, Emergency Diesel Generator 23 Load Test, Revision 17, December 6, 2010;  
January 14, 2011; February 4, 2011; March 3, 2011; April 26, 2011; May 24, 2011;  
June 23, 2011; July 20, 2011; and August 4, 2011

Condition Reports (CR-IP2-)

2011-03706 2011-03841 2011-03842

Maintenance Orders/Work Orders

WO 00244720 WO 00286142

Miscellaneous

10 CFR Part 21, Engine Systems, Inc, Air Start Motors with Friction-Clutch Inertia Drives,  
August 1, 2011  
Westinghouse Nuclear Safety Advisory Letter NSAL-11-5, Westinghouse LOCA Mass and  
Energy Release Calculation Issues, July 25, 2011

**Section 1R19: Post-Maintenance Testing**

Completed Procedures

2-PT-M021A, Emergency Diesel Generator 21 Load Test, August 16, 2011  
2-PT-Q30B, 22 Component Cooling Water Pump, August 31, 2011  
2-PT-Q30B, 22 Component Cooling Water Pump, September 1, 2011



Procedures

2-PT-Q013-DS149, PCV-1190, PCV-1191, PCV-1192, SOV-1279, SOV-1280 In-service Data Sheet, Revision 27  
 2-PT-Q034, 22 Auxiliary Feed Pump, Revision 27  
 2-PT-Q035B, 22 Containment Spray Pump Test, Revision 17  
 2-COL-10.2.1, Containment Spray System, Revision 19

Condition Reports (CR-IP2-)

2011-03841 2011-04387

Maintenance Orders/Work Orders

WO 00231992 WO 00236313 WO 52300514 WO 52344939

Drawings

9321-4022, Flow Diagram Ventilation System Containment Primary Auxiliary Building, Fuel Storage Building, Revision 62

Miscellaneous

In-service Test Program, Containment Isolation Valve 1191

**Section 1R22: Surveillance Testing**

Completed Procedures

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, August 2, 2011, Revision 1  
 2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, April 30, 2006, Revision 0  
 2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, November 1, 2004, Revision 0  
 2-IC-PC-I-E-Static Inverter-24, No. 24 Static Inverter Maintenance Record, March 18, 2010  
 2-PT-Q57, NIS Comparator, Rate, and Power Mismatch Bypass Circuits, July 7, 2011

Procedures

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, Revision 1  
 2-PT-M021A, 21 Emergency Diesel Generator Load Test, Revision 19  
 2-PT-Q013, In-service Valve Testing, Revision 45  
 2-PT-Q013, In-service Valve Testing, Sheet 21/22, Revision 20  
 2-PT-Q013, In-service Valve Testing, Sheet 38, Revision 21  
 2-PT-Q035A, 21 Containment Spray Pump Test, Revision 16  
 2-PT-Q57, NIS Comparator, Rate, and Power Mismatch Bypass Circuits, Revision 12

Condition Reports (CR-IP2-)

2007-4182 2011-0097 2011-0296 2011-1117 2011-1753 2011-2017  
 2011-2248 2011-2542 2011-03281

Maintenance Orders/Work Orders

WO 185748 WO 282952 WO 52338107 WO 52350830

Drawings

015C13786, Static Switch 10KVA, 60 HZ, 120 VAC, Revision 0  
 B208879, Flow Diagram Post Accident Containment Venting System, Revision 23

Miscellaneous

Engineering Change Request 12140, Perform an EN-DC-167 Classification for the Unit 2  
Hydrogen Recombiners, May 17, 2011  
FEX-00039-02, Emergency Diesel Generator Loading Study, Revision 2  
Safety Injection System Health Report, 3Q2010

**Section 1EP2: Alert and Notification System Evaluation**

Procedures

Entergy Indian Point Energy Center Alert and Notification System Design Report, Revision 4  
IP-EP-AD20, Indian Point Energy Center Alert Notification System Test, Revision 4  
IP-EP-AD30, IPEC ATI Siren System Administration, Revision 3  
IP-EP-AD31, IPEC ATI Siren System Maintenance Administration, Revision 1  
IP-EP-AD32, IPEC ATI Siren System Routine Polling and Testing, Revision 4  
IP-EP-AD33, IPEC ATI Siren System Quarterly Preventive Maintenance, Revision 6  
IP-EP-AD34, IPEC ATI Control Station Semi-Annual Preventive Maintenance, Revision 4  
IP-EP-AD35, IPEC ATI Siren Site Annual Preventive Maintenance, Revision 4  
IP-EP-AD38, IPEC ATI Repeater Site Annual Preventive Maintenance, Revision 6  
IP-EP-AD39, IPEC ATI Control Station Annual Preventive Maintenance, Revision 4  
CR-IP2-2011-1589, 2<sup>nd</sup> Quarter 2011 ANS Trend Report  
CR-IP2-2011-0065, 1st Quarter 2011 ANS Trend Report  
CR-IP2-2010-6106, 4th Quarter 2010 ANS Trend Report  
CR-IP2-2010-4455, 3rd Quarter 2010 ANS Trend Report  
CR-IP2-2010-2449, 2<sup>nd</sup> Quarter 2010 ANS Trend Report  
CR-IP2-2010-0078, 1st Quarter 2010 ANS Trend Report  
IPEC ANS Maintenance and Test Records, January 2010 through July 2011  
IPEC ANS Condition Reports written between January 2010 and July 2011

**Section 1EP3: Emergency Response Organization (ERO) Staffing and Augmentation System**

Procedures

Indian Point Energy Center Emergency Plan Table B -1, Revision 11-00  
EN-EP-801, Emergency Response Organization, Revision 2  
ENN-PL-140, Emergency Response Organization Respiratory Protection Guidelines, Revision 1  
EN-TQ-110, Emergency Response Organization Training, Revision 4  
IP-EP-AD9, Notification Systems Testing and Maintenance, Revision 8  
IPEC Emergency Response Organization Roster, dated August 1, 2011  
Dialogics Drill Reports for: October 27, 2009; February 11, 2010; June 10, 2010; September 21, 2010; December 9, 2010; March 3, 2011; and June 30, 2011

#### **Section 1EP4: Emergency Action Level and Emergency Plan Changes**

##### **Procedures**

Indian Point Energy Center Emergency Plan, Revision 10  
EN-LI-100, Process Applicability Determination, Revision 10  
EN-EP-305, Emergency Planning 10 CFR 50.54(q) Review Program, Revision 2  
50.54(q) Decrease In Effectiveness reviews for:  
    IP-EP-120, Emergency Classification, Revisions 5 and 6  
    IP-EP-320, Radiological Field Monitoring, Revision 5  
    IP-EP-360, Core Damage Assessment, Revision 2  
    IP-EP-410, Protective Action Recommendations, Revision 6  
    IP-EP-430, Site Assembly, Accountability and Relocation of Personnel Offsite, Revision 6  
    IP-EP-510, MRPDAS, Revision 5  
50.54Q-2011-0216, Implementation of the Security Owner Controlled Area Boundary  
50.54(q) Screenings conducted between November 2010 and July 2011

#### **Section 1EP5: Correction of Emergency Preparedness Weaknesses**

##### **Procedures**

Quality Assurance Audit Report QA-07-2011-IP-1 (10 CFR 50.54(t) Report)  
Quality Assurance Surveillance Report QS-2010-IP-09 (Off-year 50.54(t) surveillance)  
Emergency Preparedness Audit Record, to Extend the Emergency Preparedness Audit to a 24  
    Month Frequency as Allowed by EN-QV-109, Audit Process, and 10 CFR 50.54(t)(1)(ii),  
    dated May 27, 2010  
IP3LO-2010-00016, FEMA/NRC Emergency Preparedness Exercise Readiness  
LO-HQNLO-2010-00018, Snapshot Benchmark, EP Manager Qualification Standards  
IPEC Unit 2 Alert Report for November 7, 2010, Transformer Explosion Event, dated  
    November 7, 2010  
IPEC Emergency Preparedness Drill Performance Reports for drills conducted on:  
    June 2, 2010, August 12, 2010, September 1, 2010, September 14, 2010, December 7,  
    2010, February 3, 2011, and June 9, 2011  
IPEC EP-Related Condition Reports generated between January 1, 2010 and August 20, 2011

#### **Section 1EP6: Drill Evaluation**

##### **Procedures**

2-E-0, Reactor Trip or Safety Injection, Revision 4  
2-E-3, Steam Generator Tube Rupture, Revision 1  
2-AOP-SG-1, Steam Generator Tube Leak, Revision 12  
2-AOP-INST-1, Instrument/Controller Failures, Revision 6  
2-AOP-FW-1, Loss Of Main Feedwater, Revision 13

##### **Miscellaneous**

Form EP-4, Central Control Room Initial Notification Checklist, July 26, 2011, Revision 15  
Form EP-5, Upgrade/Update Notification – Alert/SAE/GE Checklist, July 26, 2011, Revision 13  
IPEC Simulator Evaluated Scenario LRQ-SES-058, July 26, 2011, Revision 1  
Radiological Emergency Data Form, Part 1, July 26, 2011

**Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment****Procedures**

IPEC I.E. Bulletin 80-10 Program  
 IP-SMM-CY-001, Radioactive Effluent Control Program, Revision 9  
 0-CY-2730, Airborne Radioactive Effluents, Revision 3,  
 0-CY-1320, Effluents Management System, Revision 1  
 2-SOP-5.1.5, Calculation and Recording of Radioactive Liquid Releases, Revision 37  
 2-SOP-5.2.4, Calculation and Recording of Radioactive Gaseous Releases, Revision 37  
 3-SOP-WDS-014, Liquid Waste Releases, Revision 25  
 3-SOP-WDS-013, Gaseous Waste Releases, Revision 28

**Condition Reports (CR-IP3-)**

2009-4430	2010-1703	2010-3795	2011-0738	2011-1312	2011-3479
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**Condition Reports (CR-IP2-)**

2010-0872	2010-2186	2010-3300	2010-4643	2010-7153	2011-0186
2011-0463	2011-0960	2011-1613	2011-3173		

**Miscellaneous**

Quality Assurance Audit Report No. QA-02-06-2009-IP-1  
 IPEC Snapshot Self-Assessment Report, IP3LO-2010-154, Groundwater Protection Initiative  
 IPEC Snapshot Self-Assessment Report, IP3LO-2007-149, IE Bulletin 80-10  
 2009 Annual Radioactive Effluent Release Report  
 2010 Annual Radioactive Effluent Release Report  
 Final Safety Analysis Report, Section 11, Waste Disposal and Radiation Protection

**Section 40A1: Performance Indicator Verification****Completed Procedures**

EN-LI-114, NRC Performance Indicator Process, October 7, 2010  
 EN-LI-114, NRC Performance Indicator Process, January 5, 2011  
 EN-LI-114, NRC Performance Indicator Process, April 6, 2011

**Procedures**

DEP PI data, July 2010 – June 2011  
 EN-EP-201, Performance Indicators, Revision 12  
 EN-LI-114, Performance Indicator Process, Revision 4  
 ERO Drill Participation PI data, July 2010 – June 2011  
 ANS Reliability PI data, July 2010 – June 2011

**Section 40A2: Problem Identification and Resolution****Condition Reports (CR-IP2-)**

2002-07051	2008-04265	2009-03084	2009-05169	2010-03655	2010-04633
2010-04931	2010-05065	2010-05288	2010-05394	2010-05414	2010-05517
2010-05888	2010-06251	2011-03723	2011-01414	2011-01901	2011-02714
2011-04015					

Condition Reports (CR-IP3-)

2009-04713	2010-02039	2010-02185	2010-02438	2010-02674	2011-03831
2009-04025	2010-02398	2010-02039	2010-02185	2010-02438	2010-02674
2010-02724					

ASME In Service Tests

3PT-VO32S, Inservice Test of Service Water System Outside VC, completed March 25, 2009, Revision 1  
 3PT-VO32S, Inservice Test of Service Water System Outside VC, completed March 4, 2003 [Test Failed: CR-IP3-2011-00784 (February 28, 2011)], Revision 1

Engineering Analyses & Calculations & Standards

EC No. 24332, Engineering Evaluation of the Use of Enecon CeramAlloy CL+, CP+ Adhesive Coating for Stainless Steel Material in Service Water System  
 Entergy Calculation, IP-CALC-11-00056, August 8, 2011; Evaluation of Pipe Wall Thinning at Line No. 1093 and 1099

Nondestructive Examination Data Sheets

IP3-UT-11-070, UT Erosion/Corrosion Examination of 10" SWN-1099

System & Program Health Reports & Self-Assessments

Indian Point Unit 2, Service Water System Health Report, Q1- 2011  
 Indian Point Unit 2, Service Water System Health Report, Q4- 2010  
 Indian Point Unit 3, Service Water System Health Report, Q1- 2011  
 Indian Point Unit 3, Service Water System Health Report, Q4- 2010

Program Documents

Entergy Program EN-DC-315, Flow Accelerated Corrosion Program, June 22, 2011, Revision 5  
 Entergy Program EN-DC-184, NRC Generic Letter 89-13 Service Water Program, April 6, 2010, Revision 1  
 Entergy Program Section No. SEP-SW-001, NRC Generic Letter 89-13 Service Water Program, July 11, 2011, Revision 4

Maintenance Orders/Work Orders

00220134 01 00243476 01 00251249 01 00250166 01

Miscellaneous Documents

IP3 FSAR Update, Chapter 9, Page 111 of 182, 2009, Revision 3  
 American Society for Testing and Materials A513-94: Standard Specification for Electric-Resistance-Welded Carbon Steel and Alloy Steel Mechanical Tubing  
 United Engineers and Constructors Inc., Specification for Flexible Piping Connectors for Emergency Back-Up Diesel Generators, Westinghouse Electric Corporation, Indian Point Generating Station Unit No. 3, Consolidated Edison Company of New York; Specification No. 9321-05-248-62, November 30, 1970  
 American Society for Testing and Materials A 249/A 249M-94a: Standard Specification for Welded Austenitic Steel Boiler, Superheater, Heat-Exchanger, and Condenser Tubes  
 Entergy Receipt Document 00006147; Joint, Pipe Restrained, SS, 4" X 8" Long, January 10, 2010  
 Material Procurement Dedication Plan, April 24, 1998, PO# 10262978, UTK# 470889  
 Enecon North East letter dated August 16, 2011; Subject: Application of the Enecon CeramAlloy CL+ Coating System to the IP2 EDG Service Water Piping Flex Couplings

**Section 40A3: Follow-up of Events and Notices of Enforcement Discretion****Procedures**

0-AOP-Seismic-1, Seismic Event, Revision 3  
 EN-LI-102, Corrective Action Process, Revision 3

**Completed Procedures**

0-AOP-Seismic-1, Seismic Event, Revision 3, August 23, 2011  
 OAP-008, Severe Weather Preparations, Revision 9, August 27, 2011

**Condition Reports (CR-IP2-)**

2002-4034	2003-5474	2003-5571	2003-6974	2005-4875	2006-5827
2010-5713	2010-5913	2011-2967	2011-4256	2011-4320	2011-4324
2011-4384	2011-4409	2011-4517			

**Miscellaneous**

Engineering Change Request 11042, June 28, 2011  
 ENN-EE-S-003-IP, Engineering Standard, Revision 0  
 IP2 Maintenance Rule Basis Document for Annunciators, June 17, 1998  
 Licensee Event Report 2010-008-00, Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Low-Low Level Alarms, November 9, 2010  
 Licensee Event Report 2010-008-01, Safety System Functional Failure Due to Inoperable Refueling Water Storage Tank Low-Low Level Alarms, September 15, 2011  
 NRC Information Notice 2011-12, Reactor Trip Resulting From Water Intrusion into Electrical Equipment, June 16, 2011  
 Operator Narrative Logs, August 23, 2011

**Section 40A5: Other Activities****Procedures**

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, Revision 1  
 2-DCS-005-GEN, Pre-Op, Revision 2  
 2-DCS-006-GEN, Vertical Cask Transporter (VCT) Operation, Revision 7  
 2-DCS-008-GEN, Unit 2 MPC Loading & Sealing Operations, Revision 12  
 2-DCS-009-GEN, MPC Transfer & HI-STORM Movement, Revision 10  
 2-DCS-016-GEN, DCSS Special Lifting Devices, Revision 4  
 2-DCS-023-GEN, Forced Helium Dehydrator (FHD) System Operations, Revision 13  
 2-DCS-026-GEN, FSB 110 Ton X-Sam Gantry Crane Operations, Revision 4  
 2-DCS-027-GEN, FSB 110 Ton X-Sam Gantry Crane Preventive Maintenance Procedure, Revision 1  
 2-DCS-032-GEN, Dry Cask Loading Readiness Guidelines, Revision 3  
 2-DCS-34-GEN, HI-TRAC Annual Inspection, Revision 3  
 2-SOP-17.12, Spent Fuel Handling Machine and Spent Fuel Pit Operations, Revision 15  
 2-SOP-17.25, General Handling Instructions for Fuel Assemblies and Inserts, Revision 8  
 CR-IP2-2011-02368, IPEC ISFSI Site Boundary Dose Calculation  
 EN MA 118, Foreign Material Exclusion  
 EN MA- 119, Material Handling Program  
 GQP-7.2, Procurement, Receipt, Storage, and Issue of ASME III, Subsection NCA 3800 Materials, Revision 4  
 GQP-9.6, Visual Examination of Welds, Revision 10

## A-12

GQP-9.7, Solvent Removable Liquid Penetrant Examination and Acceptance Standards, Revision 13

GSW -1, General Welding Standard 1, Revision 4

Holtec Letter, Document ID: 1823010, IPEC ISFSI Pad Operability

Holtec Procedure HPP-1027-200, Loading Campaign Preparation Procedure, Revision 0:  
Quality Assurance Surveillance Report No. 2010-IP-14

WCP-3, Weld Material Control, Revision 9

WCP-5, Weld and Base Metal Repair, Revision 5

WCP-8, Preheating and Post Weld Heat Treatment, Revision 9

### Completed Procedures

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, August 2, 2011, Revision 1

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, April 30, 2006, Revision 0

2-CY-3610, Passive Hydrogen Recombiner Inspection and Testing, November 1, 2004,  
Revision 0

### Condition Reports (CR-IP2-)

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2011-2248	2011-2542	2011-2368			

### Maintenance Orders/Work Orders

WO 52338107	WO 52350830
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### Drawings

B208879, Flow Diagram Post Accident Containment Venting System, Revision 23

### Miscellaneous

Engineering Change Request 12140, Perform an EN-DC-167 Classification for the Unit 2  
Hydrogen Recombiners, May 17, 2011

GQP-7.2, Procurement, Receipt, Storage, and Issue of ASME III, Subsection NCA 3800  
Materials

GQP-9.6, Visual Examination of Welds

GQP-9.7, Solvent Removable Liquid Penetrant Examination and Acceptance Standards

GSW -1, General Welding Standard 1

Holtec Letter, Document ID: 1823010, IPEC ISFSI Pad Operability

Holtec Procedure HPP-1027-200, Loading Campaign Preparation Procedure:

Quality Assurance Surveillance Report No. 2010-IP-14

WCP-3, Weld Material Control

WCP-5, Weld and Base Metal Repair

WCP-8, Preheating and Post Weld Heat Treatment

## **Section 40A7: Licensee-Identified Violations**

### Procedures

EN-LI-102, Corrective Action Process, Revision 3

Condition Reports (CR-IP2-)

2005-4875    2010-5713    2010-5913

Miscellaneous

Engineering Change Request 11042, June 28, 2011

ENN-EE-S-003-IP, Engineering Standard, Revision 0

IP2 Maintenance Rule Basis Document for Annunciators, June 17, 1998

Licensee Event Report 2010-008-00, Safety System Functional Failure Due to Inoperable  
Refueling Water Storage Tank Low-Low Level Alarms, November 9, 2010

Licensee Event Report 2010-008-01, Safety System Functional Failure Due to Inoperable  
Refueling Water Storage Tank Low-Low Level Alarms, September 15, 2011



A-14  
**LIST OF ACRONYMS**

ABFP	auxiliary boiler feedwater pump
ACE	apparent cause evaluation
ADAMS	Agencywide Document Access and Management System
ALARA	as low as is reasonably achievable
ANS	alert and notification system
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CCW	component cooling water
CFR	Code of Federal Regulations
CR	condition report
CS	containment spray
DEP	Drill and Exercise Performance
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EAL	emergency action level
EDG	emergency diesel generator
ENTERGY	Entergy Nuclear Northeast
EP	emergency preparedness
ERO	emergency response organization
FSAR	final safety analysis report
GPI	ground water protection initiative
HEPA	high efficiency particulate air
HX	heat exchanger
I&C	instrument and control
IMC	Inspection Manual Chapter
IP	inspection procedure
IPEC	Indian Point Energy Center
IR	inspection report
ISFSI	independent spent fuel storage installation
LER	licensee event report
LPT	low-profile-transporter
MPC	multi-purpose canister
MR	maintenance rule
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	off-site dose calculation manual
OEDO	Office of the Executive Director for Operations (NRC)
OOS	out of service
pCi/L	picocurie per liter
PFP	pre-fire plan
PI	performance indicator
RA	regional administrator
REMP	radiological environmental monitoring program
RETS	radiological effluents technical specifications
RHR	residual heat removal
RI	resident inspector
RWST	refueling water storage tank
SDP	significance determination process

SRI	senior resident inspector
SSC	structure, system, and component
SW	service water
TS	technical specification
UFSAR	updated final safety evaluation report
URI	unresolved item
WO	work order